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ABSTRACT

This paper explores the emerging relationship between distance education and sustainable development. After ranging through the literature on sustainable community development, this essay concludes that above all it must be unified: it must combine the traditional economic criteria for success (profits and employment) with a fusing of community and corporate culture and a strong applied ethic of environmental stewardship. As well, successful sustainable community development must be mindful of the quest for the well-lived life. The most obvious link between such development and distance education is that distance education serves small communities, many of which are infused with traditional wisdom and struggling to recapture self-reliance in economic conditions of change and unpredictability. In many northern Canadian communities, people are also concerned with environmental stewardship issues, which typically are introduced from outside and appear beyond local control. Distance education can empower adults in small communities to undertake participatory action research to solve local problems. In the Arctic Institute's experience with Native communities, both locally developed curriculum materials and community-based adult education programs can nurture community empowerment, cultural and language maintenance, and entrepreneurship. Finally, we must recognize that the emerging environmental crisis is the end product of science and technology rooted in orthodox Christian arrogance toward nature. We need new values of environmental ethics and stewardship. Contains 23 references. (SV)

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Linking Distance Education to Sustainable Community Development

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> Give a man a fish . . . and you are helping him a little bit for a short while; teach him the art of fishing and he can help himself all his life. On a higher level: supply him with fishing tackle; this will cost you a good deal of money, and the result remains doubtful; but even if fruitful, the man's continuing livelihood will still be dependent on you for replacements. But teach him how to make his own fishing tackle and you have helped him to become not only self-supporting but also self-reliant and independent (Schumacher, 1973:169-170).

> Distance education . . . That's what we had to do in my time—go to Edmonton for high school. You could only go up to grade nine back home (per.comm. Elmer Ghostkeeper).

In preparing to write this paper I spoke to colleagues who live and work in northern communities about what they understood by the terms "distance education" and "sustainable development." Everybody consulted had an idea about the meaning of these terms, but all of the ideas were different. And the informants had great difficulty linking the two terms together. In this small personal sample of opinion, sustainable development had more currency in local usage; distance education was thought to be a southern academic notion, "something cooked up in Calgary or Edmonton perhaps." Hence this

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paper explores the emerging relationship between the two terms. Because I am more conversant with sustainable development and its ideological roots, we begin our exploration here.

Introduction to the Sustainable Development Concept

To first find the term "sustainable development" you have to turn to Brundtland Report—*Our Common Future* (1987); to understand the evolution of the term, however, requires a lot more page turning! Arguably western scholars can begin with the creation account in Genesis, the first book of Moses:

> Then God said, "Let us make humankind in our image, after our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the earth, and over every creeping thing that creeps upon the earth." So God created humankind in his own image, in the image of God he created him; male and female he created them. And God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth" (NRSV, Genesis 1:26-28).

These words at the literal level of interpretation place humankind above nature; they remove us from the position of aboriginal stewards and co-participants, and empower us as owners, managers and developers. In essence they provide the moral basis of the modern industrial economy and cut us off from our spiritual birthright developed over three million years of homonid evolution as hunters and gatherers. In Genesis we are given spiritual permission to move from the bush economy to the agricultural economy with its attendant notion of private property ownership, crop surpluses, special castes, walled towns, taxes, literacy, armies, priests and other specialists. In this move we began the sacrifice of sustainability.

It is simplistic, however, to lay all the blame on Moses (or more properly, his followers who wrote the words attributed to him a thousand years after his death). As Lynn White Jr. wrote in his article entitled "The Historical Roots of Our Ecologic Crisis":

> No new set of basic values has been accepted in our society to displace those of Christianity. Hence we shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man (Science, 1967:1207).

White struggled to promote an alternative Christian view of nature, and proposed Saint Francis of Assisi as a patron saint for ecologists. In Francis he found a heretical proponent of the "spiritual autonomy of all parts of nature" (Science, 1967:1207). White rejected the then contemporary beatnik affinity for Zen Buddhism because he felt it was too conditioned by Asian history. He was "dubious of its viability among us" (Science, 1967:1206).

In the 1980s a growing band of modern Christian writers began searching for an ecological theology that could guide and inspire us in the face of impending ecological crisis. A leader of the emerging eco-theologians is Father Thomas Berry (1988), a Passionist monk who lives in New York city. Within the confines of the scriptures, Father Berry argues for a reinterpretation of Genesis and a special relationship with aboriginal First Nations:

> In their traditional mystique of the earth, the First Nations are emerging as one of our surest guides into a viable future (1988:1).

Father Berry believes that the only hope for recovering ecological harmony lies in infusing the industrial world with aboriginal values derived from the land:

> With supreme shock we discover that our historic mission is not what we thought it was. Beyond that we discover that this continent is a delicate balance of life systems, that the fuels for our machines are limited, that defacing the earth defiles ourselves and destroys the divine voice that speaks so powerfully through every phase of cosmic activity (1988:22).

In other words, we must stop taking Genesis literally and tune in to our bush economy antecedents, whose present day representatives are the people of the First Nations.

We face a broad dilemma in revisiting our earlier values through the example of present day First Nations. All around us the natural world is in decline and our literal acceptance of "be fruitful and multiply" has placed populations on the earth in circumstances that require agribusiness to survive. We are therefore constrained in our attempts to recapture ecological harmony, and we are increasingly reliant on agricultural and industrial modes of production. So the question is: how can we achieve sustainable development in an over-populated, urbanized and largely industrial landscape? Luckily a diverse global experience and literature have contributed to the evolution of answers to this question over the last sixty years. At its roots this literature champions self-reliance, local control, a grassroots-up methodological approach and a

growing disdain for the specialized services of experts. It is also mindful of environmental stewardship, the contributions of land-based traditional economies and concerns itself philosophically with the pursuit of the well-lived life.

Many of the early writers on sustainable development have now achieved cult status, and their works are being re-issued to new generations of students. Mahatma Gandhi's creation in 1934 of the All-Indian Village Industries Association (A.I.V.I.A.), promoting a vision of sustainable rural economies with a decentralized economic base and local production and consumption (Woodcock 1972:81-89), today motivates Canadian community development practitioners and writers in the Maritimes and the North. Gandhi gave up his law practice, cut his ties with the industrial economy and donned peasant clothes in 1936 to live in Segaon village and immerse himself in experiments with new crop production, hand-made cloth, handicrafts and the concept of self-supporting education. Students in Segaon were taught that education is a privilege. They were required to apply their vocational training to village service while still at school. The Segaon experiment allowed Gandhi to practice what he preached and to learn first hand the realities of village life. In doing so he created a working model of sustainable development based on village-scale institutions, local decision making, and face-to-face relationships. Following in his footsteps, Gandhi's disciples have now developed hundreds of model villages

> in which local industries based on locally produced raw materials, good sanitation, basic education and the diminution of purdah (veiling of women), and untouchability, together with training in better farming methods have produced a superior standard of living and a sense of increased dignity among the people (Woodcock 1972:84).

E. F. Schumacher also shared Gandhi's frustration with theorizing without practical experience. After graduating in economics at New College, Oxford in 1933 he taught for a short while at Columbia University in New York. The classroom was no substitute for the reality he sought, however, and Schumacher left to go farming and to dabble in journalism. He wanted to reach a broader audience with his ideas about the practice of economics "as if people mattered" (1974). Schumacher championed the Buddhist ideal that production from local resources for local needs is the most rational form of economic life (1974:51-60). He argued that dependence on foreign imports was destabilizing and that true development is locally-controlled and locally sustainable (1974:57-58). Schumacher also invoked Bertrand de Jouvenal, the French political philosopher, who found fault with the global trends towards urbanization and conurbation:

> As the world is ruled from towns where men are cut off from any form of life other than human, the feeling of belonging to an ecosystem is not revived. This results in harsh and improvident treatment of things upon which we ultimately depend, such as water and trees (Gregg, 1958).

To Schumacher, the industrial economy caused the perversion of local wisdom derived from agrarian societies. "The Buddhist economist would insist that a population basing its economic life on non-renewable fuels is living parasitically, on capital instead of income" (1974:57-58). In consuming its capital in the form of environmental degradation the industrial economy contains the seeds of its demise. Schumacher joined with Galbraith (1962) in demonstrating that the squandering of non-renewable resources, and the diminution of human dignity associated with mass production of non-essential commodities, was development without heed to environmental, rural or spiritual values. It was his personal anathema, and there was only one way out: "the Middle Way between materialist heedlessness and traditionalist immobility" (1974:60).

Very much in the quest for the "Middle Way," the Dag Hammarskjold Foundation (1975) carried on with Schumacher's mission. Since 1975 this foundation has been promoting "Another Development" as an alternative to both capitalism and socialism. "Another Development" signified:

> . . . development as a whole. Its ecological, cultural, social, economic, institutional and political dimensions can only be understood in their systematic interrelationships, and action in its service must be integrated.
>
> Another Development is (1) geared to the satisfaction of needs, beginning with the eradication of poverty, (2) endogenous and self-reliant, relying on the strength of the societies that undertake it, and (3) in harmony with the environment (Dag Hammerskjold Foundation 1975:28).

The Hammarskjold approach blends Gandhi's sense of village self-reliance with the practice of economics as if people mattered. Another Development requires a careful mortising of development activities into the local environment, "rather than changing the environment to fit into activities" (Dubbs 1988:14).

Writing from a Canadian perspective in 1979, Benjamin Higgins and Jean Downing Higgins in *Economic Development of a Small Planet* also carry forward the *Small is Beautiful* message of Schumacher and the alternative vision of the Hammerskjold Foundation. In their words:

> The concept of development now includes all elements of human life that contribute to human welfare, including nutrition, health, shelter, employment, the physical environment, the sociocultural environment (quality of life) and such matters as participation in the decision making process, a sense of human dignity of belonging — anything pertaining to the "style" or pattern of development most appropriate to a country's values and circumstances (1979:151-152).

Higgins and Higgins also harken back to the coining of the term "unified approach" by the 1969 Stockholm conference of the UN Expert Group on Social Policy and Planning in National Development. The "unified approach" describes holistic development across four themes: the creation of local employment; the creation and local retention of wealth; the promotion of local culture and values in the development process; and the entrenchment of environmental stewardship. In essence the "unified approach" combines the contributions of Gandhi, Schumacher, Hammarskjold and Higgins and Higgins in one thematic philosophy.

Current Theoretical Perspectives and Approaches

The 1980s saw a mushrooming of development literature. The publication of *Our Common Future* (1987) served to rekindle the thinking and doing process we have traced back to the Indian village of Segaon. As Schumacher wrote on the last page of *Small is Beautiful*:

> Everywhere people ask: "What can I actually do!" The answer is as simple as it is disconcerting: we can, each of us, work to put our own inner house in order. The guidance we need cannot be found in science or technology, the value of which utterly depends on the ends they serve; but it can still be found in the traditional wisdom of mankind (1974:293).

A signal contributor to the current debate on praxis is Paul Hawken author of *The Next Economy* (1983) and *Growing a Business* (1987). Hawken has always written about what he does and what he does has always been philosophically motivated. He is convinced that small businesses in the information and service economy are the way of the future, and that they must exemplify service quality, knowledge over mass, environmental stewardship and self-reliance. Aligned with Schumacher and Galbraith on the demise of the industrial economy, Hawken forecasts a movement away from mass markets and mass production (1987:47), and argues that "the child with his thousand needs and desires matures into the adult", and so as a "post industrial economy, we are the economic analogue of that adult" (1987:43).

The industrial economy is giving way, in Hawken's view, to the "informative economy."

While he does not use the term unified approach, Hawken's writing is centred on the four key themes that emerged from the 1969 Stockholm UN conference on social policy. He advocates local, individual action to create jobs, very much in the mainstream American tradition of entrepreneurship. He stresses retention of locally generated wealth and assiduous reinvestment in the community, including tithing of a certain percentage of pre-tax profits to the neighbourhood the business serves, a conspicuous combination of corporate culture with community culture, and consequently, a conspicuous promotion of environmental stewardship. On the topic of environment, Hawken writes in a vein similar to Schumacher that "today we are eating into past reserves (1983:112) and that "the very nature of our industrial, 'mass' economy has caused it to reach some very real limits in terms of what the environment can provide and support" (1983:180).

Hawken's businesses (Erewhon Trading Co., one of North America's first natural food stores and Smith and Hawken, Ltd., the premier garden and horticultural catalog company) exemplify his personal philosophy and their conspicuous success embodies Schumacher's dictum to get "our own inner house in order" (1974:293). His approach as a writer is the same as Gandhi and Schumacher—he has lived his ideas and comes at the reader with a combination of theory and personal experience. He has created sustainable employment for himself and his employees and he provides an entrepreneurial prescription for the future that builds on both traditional wisdom and a shrewd analysis of the economic future.

In Canada another conspicuous move from thinking to doing has been accomplished by Professor Douglas House of Memorial University in Newfoundland. As chairman of the Royal Commission on Employment and Unemployment (R.C.E.U.) he oversaw preparation of *Building on Our Strengths* (1986), which strongly promotes the unified approach to development. While noting a general tendency to blame government for the evils of welfare program dependency, the R.C.E.U. stresses the need to move beyond assignment of blame to the creation of sustainable development options. They stress the selection of options across all sectors, including, non-renewable production of oil and gas (1986:447). The commission writes that the high volume, short term revenues from oil and gas in turn can be used to lower provincial debts and taxes, improve social services and create short-term business opportunities.

Key to the R.C.E.U.'s recommendations, however, is the creation of sustainable long-term employment in areas of traditional Newfoundland strength:

> The title of our Report asserts that, in working towards a post-industrial society, we have strengths—not just social strengths but economic strengths as well—that have been too little recognized. Flexibility, adaptability, occupational pluralism, home production, the rhythm of a seasonal life-style, household self-reliance — these are catchwords that capture the traditional culture of outport Newfoundland. In almost all the blueprints offered us for industrialization, these have been seen as barriers to economic development. And yet, ignored, battered or deprecated, Newfoundland's small communities have stubbornly persisted (1986:24).

For over two hundred years Newfoundland outports have persevered, adhering to local traditions and honing a sustainable approach to living based on home production and harvest from land and sea. The outport life has long advocated local production for local needs with strong economic traditions of lumber and firewood production, house and farm building bees, family garden plots, church suppers, cooperative fish production, community singing and theatre, and handicraft manufacture. Remoteness from the off-island metropolitan centres of Canadian commerce has guaranteed the persistence of these hinterland economic adaptations that otherwise might have been lost in the tide of urban and industrial development. One gets the distinct impression that Gandhi, Schumacher and Hawken would all cheer on the stubborn residents of outport Newfoundland.

What the R.C.E.U. recommends is a Hawken-style information intensification of the Newfoundland economy. Agriculture, fisheries, services (the fastest-growing segment of the Newfoundland economy in recent years) and tourism are all promoted as centres for new economic growth. In each case the R.C.E.U. argues for re-thinking the status quo. Rather than building golf courses and industrial economy hotel chains, they point to Newfoundland's special market niche advantages. By combining computerized booking systems, outport bed and breakfast, the tradition of the church supper, and harvest festivals with mummery, Newfoundland can offer unique cultural experiences to world tourists. The key lies in unifying, packaging and promoting local strengths rather than importing and justifying off-island attractions.

The intelligence and efficacy of the R.C.E.U.'s recommendations have recently been brought into sharp focus by the Sprung greenhouse joint venture with the Peckford administration. In this case, a technology that had failed to demonstrate sustainability in Calgary was imported as an agricultural panacea to Newfoundland. Twenty million Newfoundland tax dollars were pumped into the project over a three year period to produce cucumbers, "never a staple of the Newfoundland diet" (pers.comm. Dr. Doug House). Now in bankruptcy and enshrouded in law suits, the greenhouses lie fallow and local staff are unemployed.

Under the microscope of unified development, the Sprung joint venture failed to sustain local employment and income generation, it did not promote a beneficial corporate/community culture union and it did not achieve the basics of environmental stewardship. An unverified technology instead wasted tax dollars, promoted another Newfoundland boom and bust cycle, and ignored the dietary preference of Newfoundlanders and the production capacity of island market gardens. Perhaps the worst legacy of the joint venture was the reinforcement of a negative economic stereotype of Newfoundlanders.

On the bright side, however, the cucumber development policies of the past provincial government in part contributed to its downfall, and a new provincial government under premier Clyde Wells has been placed in office. One of the first steps of the new administration was to entice Professor House from academe for a three year stint as chairperson of the Economic Recovery Commission. His first task is examining the potential for implementation of the R.C.E.U.'s recommendations!

Considering the Well-Lived Life

Up to this point in our consideration of the evolution of the concept of sustainable development, we have focussed on economic, cultural and environmental parameters. To this discussion we must now add a new factor—health. Health is the essential prerequisite for the well-lived life, and without it unified development is impossible. It follows that environmental conditions which impair health detract from our quest for sustainable development, and as the Canadian Institute for Advanced Research (1989) and Evans and Stoddart (1990) have recently argued, socio-psychological factors are also increasingly linked to morbidity and mortality. Whilst the reader is cautioned that existing evidence is clearly only suggestive (1989:ii, iii), the Canadian Institute for Advanced Research (C.I.A.R.) notes that "the negative effects of unemployment may relate as much to the impact on self-esteem or sense of control, and on social connections and communication, as on any

associated scarcity" of health care resources. As well the C.I.A.R. notes that members of modern societies share disproportionately in the major improvements in health care delivery. In fact "life expectancies continue to be graded by social class or status, whether measured by income, education or occupational status" (1989:i).

What all this means is still moot, but Evans and Stoddart are beginning to piece together an interesting hypothesis. They note that the Japanese have recently achieved the highest life expectancy in the world (1990:58). Average life expectancy continues to rise in Japan and is now setting new standards for the possible in human populations (1990:59). Furthermore, the Japanese spend proportionately less than most western democracies on health care. As a nation, the Japanese maintain high personal savings rates. We are all by now also well aware of Japanese labour and management philosophy and the nature of the economic and social contract between the individual and the firm. The high personal savings rates of the Japanese enable national access to low-cost long term capital, which in turn is invested in research and development and new plants and equipment. Japanese factories consequently are among the best in the world and product quality is very high. Could it be that the resulting boost in national self-esteem and individual self-control is contributing to socio-psychological bolstering of the Japanese immune system? If so, does this not argue for a radical restructuring of the economic and social contract with industry and government in Canada?

Evans and Stoddart certainly *suggest* that extractive resource economies vulnerable to externally generated business cycle swings do not contribute to employee health. They also suggest (1990:61) that by limiting the growth of the health care sector, resources can be freed up to devote to necessary capital investment in industrial plant. All this suggests that in the interests of sustainable economic development we must be conscious of the need for creating work environments that minimize class distinctions, that use state of the art technology, that provide certainty of continued employment and skills upgrading, and that promo: self-esteem and a sense of personal control over one's destiny. These facto s may be necessary for living the well-lived life and not just a protracted death in an extractive economy. And what point is the quest for sustainable development if it is not conducted in the context of the well-lived life?

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Forging the Link Between Distance Education and Sustainable Community Development

It is now time to bond unified development, the well-lived life and distance education in the cause of sustainable community development. *The first and most obvious link is that distance education serves small communities, many of which are infused with traditional wisdom and struggling to retain or recapture self-reliance in an economic environment characterized by change and unpredictability.* In many mid-northern and northern communities people are also increasingly concerned with environmental stewardship issues, which typically are introduced from outside and are apparently beyond local control. The northern Alberta pulp mill proposals, the current economic recession, the wind-down of the Beaufort and Mackenzie Valley oil patch and the increasing litany of plant closures and lay-offs in the metropolitan centres of Calgary and Edmonton lead us locally to despair as our employment options are limited and the environmental uncertainties of new mega projects are great. Where do we go from here and who is showing the way?

While many northern and remote communities have ample experience of government programs and the industrial economy, they lack exposure to the Middle Way. While practical experience in the bush economy and traditional wisdom are still in strong supply, they have been deprecated by several decades of mega project promotion and exposure to the industrial economy. House's lament for the indigenous capacity of the Newfoundland outports also echoes through northern Alberta and the Mackenzie Valley. While conspicuous case studies exist of applied Hawkenism (e.g., the Paddle Prairie Mall, Ghostkeeper Synergetics, and the Metis Morgan Farm; Robinson and Ghostkeeper (1988)), the first impulse of many aspiring entrepreneurs is that their idea will not work in their community. In any event, for the past 20 years it has been easier to work for government or big oil companies.

Surely now is the time for distance educators to fire up the teleconference facilities to carry forward the messages of sustainable community development. Those paralyzed by despair should be infused with Gandhi, Schumacher, Hammarskjold, Galbraith, House and Hawken.

To these names might also be added those of the international participatory action research network, writers and activists such as John Gaventa (1988), Francisco De Souza (1988), Rajesh Tandon (1988), and Budd Hall (1988). Their contribution to sustainable community development is the empowerment of adults in small communities to undertake their own research. Participatory action research has grown from the general critique of social

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science in recent years (Hall: 288), and combines community will for change with an educational process that immediately engages local people in research. It is a means for taking action for sustainable community development. Hall outlines the following basic elements of participatory action research:

1. The problem originates in the community itself and the problem is defined, analysed, and solved by the community.

2. The ultimate goal of research is the radical transformation of social reality and the improvement of the lives of the people involved. The beneficiaries of the research are members of the community itself.

3. Participatory research involves the full and active participation of the community in the entire research process.

4. Participatory research involves a whole range of powerless groups of people: the exploited, the poor, the oppressed, the marginal, etc.

5. The process of participatory research can create a greater awareness in the people of their own resources and mobilize them for self-reliant development.

6. It is a more scientific method of research in that the participation of the community in the research process facilitates a more accurate and authentic analysis of social reality.

7. The researcher is a committed participant and learner in the process of research, which leads to militancy on his/her part, rather than detachment (1988:289).

While community economics, cultural and environmental sustainability are not addressed in the above elements, they can lead to these ends. Element 5 is the most directly on point in this respect, as it speaks to the local use of resources in the cause of self-reliant development. It also harkens back to the Gandhian concept of self-supporting education, immediately of value to both the student and his/her village.

Some Distance Education Curriculum Ideas and Support from the Arctic Institute

It is not the purpose of this paper to detail the existing distance education programs at Alberta and Northwest Territories colleges and universities; it is more the point to explore the role of distance education in remote and northern communities. By combining telephone, teleconference capabilities, electronic mail systems, and interactive computer software, it is now possible for northern students to stay home and learn in their electronic cottages. By adding the potential of a biweekly or monthly tutorial visit by the teacher, students are further reinforced in their various programs by on-site tutorials. With the advent of sustainable development curricula and appropriate case study materials, northern students will be able to examine unified development initiatives at home.

Because of the perceived lack of locally relevant curricula the Arctic Institute has prepared a textbook on sustainable northern small businesses. This work, written by Wanda Wuttunee, provides northern students and aspiring entrepreneurs with fifteen case studies of existing sustainable northern small businesses. Each of the businesses profiled shares at least a 5-year business history, a record of progressive profit accumulation and local training and employment, a conspicuous matching of community and corporate cultures, and a local reputation for environmental stewardship. All businesses profiled are examples of unified development, and all typify Hawken's dictum of product or service quality, knowledge intensification and responsiveness to consumer needs. The fifteen businesses include two guide outfitters, a game rancher, a construction company, a moving company, a northern cooperative, a car dealership, a resort/marina complex, a computer store and newspaper publisher, a delicatessen, a convenience and magazine store, a grocery /restaurant /laundromat /consulting business, a small motor repair business, an Inuktitut/English translation service, and a northern airline. They range across the Yukon and Northwest Territories and include both the goods producing and information and service industries. Ideally this case study book will aid distance educators in promoting entrepreneurship in small remote communities and provide role models for students to think about.
Ms. Wuttunee will spend two years providing follow-up seminars to community college audiences and high school student groups. She will participate with three to five aspiring northern entrepreneurs in the development of sustainable small business plans.

The above project grew from many personal expressions for northern course content and hands-on advisory services in the very inter-disciplinary field of community economic development, and from an equally strong conviction (Robinson, 1990:87-89) that government employment role models and high starting salaries are stifling the process of northern entrepreneurship.

The experience of the Arctic Institute, Teetl'it Gwich'in Band, Government of the Northwest Territories Department of Education joint venture, the Gwich'in Language and Culture Project, has also reinforced our basic belief in the method of participatory action research and the role community researchers can play in community development generally (Ryan and Robinson, 1990). The Gwich'in Project has trained six Fort McPherson adults in basic Gwich'in and English literacy, anthropological research techniques (key informant interview and participant observation), primary curriculum design, word processing, basic accounting, public speaking, and land use mapping. These achievements were accomplished in a two year course developed in Fort McPherson under the guidance of Arctic Institute sponsored research associate Joan Ryan. Dr. Ryan's presence in the community as a full time resident, and her commitment to leading from behind and progressively working herself out of her job, have once again illustrated the need for a special personal approach to adult education in small northern communities. This work is developmental at its heart, and requires a strong conviction by adult educators that community adults can take control of both their education and their projects. It is not suited to educators who relish continuing control, specialist status or flying in and flying out during the educational process.

The recent Arctic Institute experience argues for a personal, on-site and nurturing approach to distance education when community empowerment is a primary goal. While the Gwich'in trainees have increasingly taken control of the work plan of the Gwich'in Language and Cultural Center, they have done so with the active encouragement and support of their coordinator. It is doubtful if the success of the training phase of this project could have been duplicated with a teleconference link to the coordinator and fly-in tutorials twice per month. In both the Sustainable Northern Small Business Project and the Gwich'in Language and Cultural Project, the Arctic Institute has learned the value of working with local experience and traditional knowledge. We have placed our faith in the capacity of northern adults to educate their peers both directly and by example, and ultimately to take control in the areas of entrepreneurship and language and culture. The Arctic Institute's role has been one of providing provisional research support and demonstrating and reinforcing the inherent wisdom of the community. While we have not been distance educators in the classic sense, we have contributed to the creation of community foundations that must first be in place for distance education to function.

Conclusions

In this essay we have ranged over the topic of sustainable community development and concluded that above all it must be unified, that is it must combine the traditional economic criteria for success (profit generation and employment), with a fusing of community and corporate culture and a strong applied ethic of environmental stewardship. In addition, successful sustainable community development must be mindful of the quest for the well-lived life. As we have seen, there is now interesting evidence linking this quest to a new economic and social contract amongst worker, employee and government—one that stresses self-esteem, self-reliance and local control and as a result is not stressful! We have also noted that the best writers on the topic of sustainable development have direct experience of what they describe. They are collectively thinkers and doers. In the all-encompassing sense of the term they are participatory action researchers.

The link between sustainable community development and distance education, at first tenuous and slippery, has led us to consider the struggle for self-reliance in small northern communities. Beset by external economic market realities and the increasing litany of externally introduced environmental problems, these communities are ripe for local empowerment. In the Arctic Institute's experience both locally developed curriculum materials and community-based adult education programs are means to the end of sustainable community development. To ensure the attainment of this goal in the North, however, we need to develop, fund and nurture distance education programs that are both empowering and unified. We need to educate for self-reliance.

Finally, we need to admit that the emerging environmental crisis is the end product of a synergy between science and technology that has its roots in the western orthodox Christian arrogance towards nature. As White (Science, 1967) pointed out, we need a new set of basic values. It is impossible to predicate sustainable development on the spiritual ethics that underwrote holes in the ozone layer, global warming, and cultural genocide for aboriginal people. We need to revisit and learn the principles of stewardship. We need to hear again and this time heed the words of aboriginal stewards like Sitting Bull:

> Behold my friends, the spring is come; the earth has gladly received the embrace of the sun, and we shall soon see the results of their love! Every seed is awakened, and all animal life. It is through this mysterious power that we too have our being and we therefore yield to our neighbors, even to our animal neighbors, the same rights as ourselves to inhabit this vast land.

Yet hear me friends! We have now to deal with another people, small and feeble when our forefathers first met with them, but now great and overbearing. Strangely enough, they have a mind to till the soil, and the love of possession is a disease in them.... They claim this mother of ours, the Earth, for their own use, and fence their neighbors away from her, and deface her with their buildings and their refuse. They compel her to produce out of season, and when sterile she is made to take medicine in order to produce again. All this is sacrilege (MacEwan, 1973:210).

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